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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.             | CONFIRMATION NO.            |
| 10/506,768  | 09/07/2004  | Dario Kriz           | 1003301-000174                  | 3542                        |
| 21839 7590 07/20/2010<br>BUCHANAN, INGERSOLL & ROONEY PC<br>POST OFFICE BOX 1404<br>ALEXANDRIA, VA 22313-1404 |             |                      | EXAMINER<br>JUNG, UNSU          |                             |
|   |             |                      | ART UNIT<br>1641                | PAPER NUMBER                |
|   |             |                      | NOTIFICATION DATE<br>07/20/2010 | DELIVERY MODE<br>ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com  
offserv@bipc.com

|                              |                                      |                                    |  |
|------------------------------|--------------------------------------|------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/506,768 | <b>Applicant(s)</b><br>KRIZ, DARIO |  |
|                              | <b>Examiner</b><br>UNSU JUNG         | <b>Art Unit</b><br>1641            |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/7/2004, 12/20/2004, &amp; 1/30/2008</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Applicant's amendments in the reply filed on April 30, 2010 have been acknowledged and entered. The reply included amendments to claims 5, 8, 13-15, and 20 and addition of new claims 21-24.

#### ***Election/Restrictions***

2. Applicant's election with traverse of species Delrin from List I and proteins/complement factors from List II in the reply filed on April 30, 2010 is acknowledged. However, the election of species requirement set forth in the previous Office action dated March 24, 2010 has been withdrawn upon further consideration.

#### ***Status of Claims***

3. Claims 1-24 are pending and currently under consideration for patentability under 37 CFR 1.104.

#### ***Priority***

4. It is noted that this application appears to claim subject matter disclosed in prior Application No. PCT/SE03/00360, filed March 7, 2003. A reference to the prior application must be inserted as the first sentence(s) of the specification of this application or in an application data sheet (37 CFR 1.76), if applicant intends to rely on the filing date of the prior application under 35 U.S.C. 119(e), 120, 121, or 365(c). See

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37 CFR 1.78(a). For benefit claims under 35 U.S.C. 120, 121, or 365(c), the reference must include the relationship (i.e., continuation, divisional, or continuation-in-part) of all nonprovisional applications. If the application is a utility or plant application filed under 35 U.S.C. 111(a) on or after November 29, 2000, the specific reference to the prior application must be submitted during the pendency of the application and within the later of four months from the actual filing date of the application or sixteen months from the filing date of the prior application. If the application is a utility or plant application which entered the national stage from an international application filed on or after November 29, 2000, after compliance with 35 U.S.C. 371, the specific reference must be submitted during the pendency of the application and within the later of four months from the date on which the national stage commenced under 35 U.S.C. 371(b) or (f) or sixteen months from the filing date of the prior application. See 37 CFR 1.78(a)(2)(ii) and (a)(5)(ii). This time period is not extendable and a failure to submit the reference required by 35 U.S.C. 119(e) and/or 120, where applicable, within this time period is considered a waiver of any benefit of such prior application(s) under 35 U.S.C. 119(e), 120, 121 and 365(c). A benefit claim filed after the required time period may be accepted if it is accompanied by a grantable petition to accept an unintentionally delayed benefit claim under 35 U.S.C. 119(e), 120, 121 and 365(c). The petition must be accompanied by (1) the reference required by 35 U.S.C. 120 or 119(e) and 37 CFR 1.78(a)(2) or (a)(5) to the prior application (unless previously submitted), (2) a surcharge under 37 CFR 1.17(t), and (3) a statement that the entire delay between the date the claim was due under 37 CFR 1.78(a)(2) or (a)(5) and the date the claim was filed was

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unintentional. The Director may require additional information where there is a question whether the delay was unintentional. The petition should be addressed to: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

If the reference to the prior application was previously submitted within the time period set forth in 37 CFR 1.78(a), but not in the first sentence(s) of the specification or an application data sheet (ADS) as required by 37 CFR 1.78(a) (e.g., if the reference was submitted in an oath or declaration or the application transmittal letter), and the information concerning the benefit claim was recognized by the Office as shown by its inclusion on the first filing receipt, the petition under 37 CFR 1.78(a) and the surcharge under 37 CFR 1.17(t) are not required. Applicant is still required to submit the reference in compliance with 37 CFR 1.78(a) by filing an amendment to the first sentence(s) of the specification or an ADS. See MPEP § 201.11.

5. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy of Sweden 0200705-2, filed on March 8, 2002 has been filed in the instant application.

#### ***Information Disclosure Statement***

6. The information disclosure statements (IDS) submitted on September 7, 2004, December 20, 2004, and January 30, 2008 have been considered by the examiner.

### ***Specification***

7. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

The abstract fails to sufficiently describe the pertinent elements of the invention.

The claimed invention is directed to a device for detection of magnetic permeability, relative magnetic permeability or relative magnetic susceptibility. The device includes a sample chamber and two coils surrounding the sample chamber with an electronic circuit for measuring the difference in inductance between the two coils. These essential elements of the claimed invention should be sufficiently described in the abstract.

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8. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: claimed limitation of the material of which the sample chamber is made is a polymer, which is selected from the group consisting of Delrin, POM, polyvinyl chloride, Teflon, polyamide, polyacetal, polyethylene, polycarbonate, polystyrene, and polypropylene as recited in claims 5, 13-15, and 21-24 are not described in the specification.

#### ***Claim Objections***

9. Claims 21-24 are objected to because of the following informalities: the abbreviated term "POM" should be defined at the first occurrence of the term. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 4, 10-12, 15, 18, and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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a. In claims 4, 10-12, 15, 18, and 24, the phrase “wherein on the coils is placed so as to be in thermal contact by being physically connected to the material which constitutes the sample chamber, but without surrounding the cavity of the sample chamber” is vague and indefinite. Claim 1, from which claims 4, 10-12, 15, 18, and 24 depend, recites that the coils surrounds the sample chamber. The limitation of one of the coils not surrounding the cavity of the sample chamber recited in claims 4, 10-12, 15, 18, and 24 is in direct contrast to the limitation of coils surrounding the sample chamber as recited in claim 1. Therefore, the relative arrangement of the coils with respect to the sample chamber is unclear and the claims fail to clearly define the metes and bounds of the claimed invention.

b. Claim s 21-24 contains the trademark/trade names TEFLON<sup>®</sup> and DELRIN<sup>®</sup>. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe acetal



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resin (DELFIN<sup>®</sup>) and polytetrafluoroethylene (TEFLON<sup>®</sup>), accordingly, the identification/description is indefinite.

***Claim Rejections - 35 USC § 102***

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1, 6, 7, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Kriz et al. (U.S. Patent No. 6,110,660, Aug. 29, 2000) (hereinafter “Kriz”).

Kriz anticipates instant claims by teaching a device for detection of magnetic permeability ( $\mu$ ) or relative magnetic permeability ( $\mu_r$ ) of a sample (see entire document, particularly Abstract). The device includes a sample chamber (10 of Fig. 4), which is a container having one opening for introduction of sample (column 8, lines 30-56). The sample chamber is inserted into a coil (L<sub>4</sub>, column 8, lines 30-56). The device is further provided with an electronic circuit that measures the inductance (Fig. 4). Kriz contemplates several embodiments for the measurement configuration including inductive coupling between two coils (column 6, line 57-column 7, line 6).

With respect to claims 6 and 7, Kriz teaches that the electronic circuit is formed such that the coils are part of an alternating current. Kriz further teaches that sample's

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$\mu_r$  can range from 1 to  $>>1$  (column 6, lines 1-5), which is encompassed by the claimed range of  $0.0000001 < \mu_r < 10$ .

With respect to claim 8, Kriz teaches a process for interaction with magnetic markers for detection of chemical substances with  $\mu_r=1$  by using the device of claim 1 to detect proteins (column 3, lines 11-43 and column 6, lines 1-5 and column).

### ***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

16. Claims 2, 3, 9, 16, 17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kriz (U.S. Patent No. 6,110,660, Aug. 29, 2000).

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Kriz teaches a device and a process for detection of  $\mu/\mu_r$  of a sample as set forth above. Although Kriz is silent on specifically teaching that the each of the coils when filled with air has an inductance in the range of 0.01 to 100  $\mu\text{H}$ , it would have been obvious to one having ordinary skill in the art at the time of the invention to choose the coils having an inductance in the range of 0.01 to 100  $\mu\text{H}$  when filled with air, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454 456, 105 USPQ 233, 235 (CCPA 1955).

With respect to claims 3 and 9, Kriz discloses the claimed invention except for the sample chamber having a volume in the range of 0.1 to 5000  $\mu\text{L}$ . It would have been obvious to one having ordinary skill in the art at the time of the invention to choose the coils having an inductance in the range of 0.01 to 100  $\mu\text{H}$  when filled with air, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454 456, 105 USPQ 233, 235 (CCPA 1955).

With respect to claims 16 and 17, Kriz teaches that the electronic circuit is formed such that the coils are part of an alternating current. Kriz further teaches that sample's  $\mu_r$  can range from 1 to  $\gg 1$  (column 6, lines 1-5), which is encompassed by the claimed range of  $0.0000001 < \mu_r < 10$ .

With respect to claim 20, Kriz teaches a process for interaction with magnetic markers for detection of chemical substances with  $\mu_r=1$  by using the device of claim 1 to detect proteins (column 3, lines 11-43 and column 6, lines 1-5 and column).

17. Claims 5, 19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kriz (U.S. Patent No. 6,110,660, Aug. 29, 2000) in view of Gundling et al. (U.S. PG Pub. No. US 2002/0012916 A1, Jan. 31, 2002) (hereinafter "Gundling") and Stretch (U.S. PG Pub. No. US 2003/0111312 A1, filed Dec. 14, 2001).

Kriz teaches a device and a process for detection of  $\mu/\mu_r$  of a sample as set forth above. However, Kriz is silent on disclosing that the sample chamber is made of a polymer.

With respect to claim 19, Kriz teaches that the electronic circuit is formed such that the coils are part of an alternating current. Kriz further teaches that sample's  $\mu_r$  can range from 1 to  $\gg 1$  (column 6, lines 1-5), which is encompassed by the claimed range of  $0.0000001 < \mu_r < 10$ .

Gundling teaches that a sample container/chamber can be fabricated out of many suitable materials such as a polymer (polystyrene, see entire document, particularly p3, paragraph [0060]).

Stretch teaches that a non-magnetic material such as polymer has a low magnetic permeability (see entire document, particularly p3, paragraph [0034]).

Therefore, it would have been *prima facie* obvious to one of ordinary skill in the art to fabricate the sample container of Kriz using polymer as taught by Gundling since polymer is a non-magnetic material with low magnetic permeability as taught by Stretch, which is suitable for use in a magnetic assays. The advantage of using a non-magnetic material with low magnetic permeability provides the motivation to use polymer as the

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material for the sample container with a reasonable expectation of success since polymeric sample container is suitable for conducting biological assays as taught by Gundling.

18. Claims 13, 14, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kriz (U.S. Patent No. 6,110,660, Aug. 29, 2000) as applied to claims 2 and 3 above, and further in view of Gundling et al. (U.S. PG Pub. No. US 2002/0012916 A1, Jan. 31, 2002) (hereinafter "Gundling") and Stretch (U.S. PG Pub. No. US 2003/0111312 A1, filed Dec. 14, 2001).

Kriz teaches a device and a process for detection of  $\mu/\mu_r$  of a sample as set forth above. However, Kriz is silent on disclosing that the sample chamber is made of a polymer.

Gundling teaches that a sample container/chamber can be fabricated out of many suitable material such as a polymer (polystyrene) as set forth above.

Stretch teaches that a non-magnetic material such as polymer has a low magnetic permeability as set forth above.

Therefore, it would have been *prima facie* obvious to one of ordinary skill in the art to fabricate the sample container of Kriz using polymer as taught by Gundling since polymer is a non-magnetic material with low magnetic permeability as taught by Stretch, which is suitable for use in a magnetic assays. The advantage of using a non-magnetic material with low magnetic permeability provides the motivation to use polymer as the material for the sample container with a reasonable expectation of success since

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polymeric sample container is suitable for conducting biological assays as taught by Gundling.

***Allowable Subject Matter***

19. The following is a statement of reasons for the indication of allowable subject matter: Claims 4, 10-12, 15, 18, and 24 recites one of the two coils being place so as to be in thermal contact by being physically connected to the material which constitutes the sample chamber, but without surrounding the cavity of the sample chamber. The prior art references cited above teach two coils that surround the sample chamber, but do not teach that one of the two coils being physically connected to the material which constitutes the sample chamber without surrounding the cavity of the sample chamber. The prior does not render the device having limitations of claims 4, 10-12, 15, 18, and 24 obvious.

20. Claims 4, 10-12, 15, 18, and 24 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Prior Art of Record***

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Sanderson (U.S. Patent No. 4,357,237, Nov. 2, 1982) teaches that copper, brass, PVC, nylon, and Delrin have a very low magnetic permeability (i.e. non-magnetic material, see entire document, particularly column 5, lines 56-62).

### ***Conclusion***

22. No claim is allowed.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to UNSU JUNG whose telephone number is (571)272-8506. The examiner can normally be reached on M-F: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Shibuya can be reached on 571-272-0806. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Unsu Jung/  
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Primary Examiner  
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